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10/618,689	07/09/2003	Robert L. Doubler	2131.000019	8552

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EXAMINER
REESE, DAVID C

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,689	DOUBLER ET AL.	
	Examiner	Art Unit	
	David C. Reese	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to Applicant's amendment filed 4/8/2005.

Status of Claims

[1] Claims 1-25 are pending.

Claim Rejections - 35 USC § 103

[2] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[3] Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garman US-5,110,244 in view of Cabahug US-5,613,816.

Garman teaches of a fastener assembly utilized to provide an arrangement for securing two members together whose assembly includes a compression ring, cylindrical shear ring, and a cylindrical pin or shank.

However, Garman fails to disclose expressly a fastener assembly whose compression ring has an inner ribbed surface and a collet member that has an outer ribbed surface.

Cabahug teaches of such entities; one that has an inner ribbed surface (87 in Fig. 3 of Cabahug), and the other which possesses an outer ribbed surface (84, 90 in Fig. 3 of Cabahug).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the compression ring and cylindrical shear ring as taught by Garman, to a compression ring with an inner ribbed surface and a cylindrical shear ring with an outer ribbed surface as taught by Cabahug, in order to allow a more secure attachment between the compression ring and the cylindrical shear ring, as well as the cylindrical pin as the compression ring is forced on top of the cylindrical shear ring.

Thus, continuing with Claim 1, Garman, discloses a linear fastener system comprising: a collet member having a base end (56 in Fig. 1 of Garman), a top end (62 in Fig. 1 of Garman), an inner engaging surface (58 in Fig. 1 of Garman), and an outer ribbed surface (62 in Fig. 1 of Garman in view of outer ribbed surface of 82 in Fig. 3 of Cabahug) positioned about a central axis;

A compression ring member having a base end (64 in Fig. 1 of Garman), a front end (63 in Fig. 1 of Garman), an inner ribbed surface (58 in Fig. 1 of Garman in view of the inner ribbed surface of 87 in Fig. 3 of Cabahug), and an outer surface (66 in Fig. 1 of Garman) positioned about a central axis;

said inner ribbed surface of said compression ring member being constructed and arranged for coaxial alignment and overlapping engagement with respect to said outer ribbed surface of said collet member, said compression ring member linearly traversable with respect to said outer ribbed surface of said collet member between a first release position and a second engaged position, wherein said engaged position results in said ribbed surfaces compressing said collet member and tensilely loading said compression ring member to engage a shank member having an outer gripping surface, and wherein said release position results in expansion of said

collet member thereby releasing said outer gripping surface of said shank member (the outer compression ring of 44 on the right side in Fig. 2 of Garman with its inner ribbed surface (in view of Cabahug). Continuing to the left side of Fig. 2 of Garman, the compression ring member slides over the cylindrical shear ring, which in view of Cabahug has an outer ribbed surface matching up with the inner ribbed surface of the compression ring. As the compression ring member slides overtop the cylindrical shear ring, the assembly is compressed against the outer ribs of the cylindrical pin or shank giving a set of outer ribs to the cylindrical shear ring (44-the compression ring, 42-the cylindrical shear ring, and 40-the cylindrical pin or shank-Fig. 4 of Garman)).

As for Claim 2, Garman discloses a fastener system including a shank member having an outer gripping surface (52 in Fig. 1 of Garman), a first end (46 in Fig. 1 of Garman), and a second end (50 in Fig. 1 of Garman).

As for Claim 3, Garman reveals a fastener system wherein said ribbed outer surface of said collet member includes at least one outwardly and circumferentially extending rib (42 in Fig. 1 of Garman, in view of Cabahug 82 in Fig. 3 of Cabahug), each said rib including a first ramp surface to facilitate coaxially aligned linear overlapping movement of said compression ring in relation to said collet member for engagement thereof, and a second ramp surface to facilitate linear removal of said compression ring from said collet member (the process of movement between the compression ring and the cylindrical shear ring as shown from Fig. 3 to Fig. 4 of Garman, in view of the inner ribbed surface of the compression ring (58 in Fig. 1 of Garman in view of the inner ribbed surface of 87 in Fig. 3 of Cabahug)with the outer ribbed

surface of the cylindrical shear ring (62 in Fig. 1 of Garman in view of outer ribbed surface of 82 in Fig. 3 of Cabahug)).

As for Claim 4, Garman makes known of a fastener system wherein said inner engaging surface of said collet member is constructed and arranged with a conjugate shape in relation to said outer gripping surface of said shank member (from Claim 4 of Garman, stating, "...and in response to the external force displaces the portion of the material of the shear ring around the plurality of circumferential ridges and into the plurality of circumferential grooves").

As for Claim 5, Garman in view of Cabahug illustrates a fastener system wherein said inner engaging surface of said collet member constructed and arranged with internal threads (58 in Fig. 1 of Garman in view of the inner ribbed surface of 87 in Fig. 3 of Cabahug).

As for Claim 7, Garman discloses a fastener system wherein said inner engaging surface of said collet member is constructed and arranged with a generally smooth surface (58 in Fig. 1 of Garman).

As for Claim 8, Garman shows a fastener system wherein said inner engaging surface of said collet member is constructed and arranged with at least one inwardly depending lip; wherein said inwardly depending lip is constructed and arranged with at least one tapered surface for cooperation with a conjugate tapered surface on said outer gripping surface of said shank member (60 of 42 in Fig. 1 of Garman with respect to the top of shank 40 whereby 60 is inserted onto the top of 40);

Wherein linear traversal of said compression ring member with respect to said axially aligned collet member compresses said collet member and tensilely loads said shank member (the progression of 44 related to 42 and 40 from Fig. 3 to Fig. 4).

As for Claim 17, Garman in view of Cabahug as stated in Claim 1, reveals a fastener system wherein said outer ribbed surface of said collet member and said inner ribbed surface of said compression ring member are constructed and arranged to maintain an axially aligned interfitting relationship in said release position (the progression of 44 related to 42 from Fig. 3 to Fig. 4).

As for Claim 23, wherein Garman discloses said collet member constructed of aluminum (Claim 8 of Garman).

[4] Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garman US-5,110,244 in view of Cabahug US-5,613,816, and in further view of Stoewer et al.US-2002/0114680.

Garman and Cabahug teach of the above claims, but do not address the issue of the collet member having a knurled surface to accommodate a corresponding knurled surface of said shank member. Stoewer et al., however, discloses lockbolt for securing a connection between components, where the knurled surface of the lockbolt creates a knurled surface onto the locking collar as to increase the connection between the two.

Thus, at the time of the invention, it would have been obvious to one skilled in the art to have modified the fastener assembly as taught by Garman, in view of Cabahug to incorporate another embodiment of the cylindrical shear ring to have a knurled surface as to offer an additional means and strength of connection between the shank member and the cylindrical shear ring.

[5] Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garman US-5,110,244 in view of Cabahug US-5,613,816, and in further view of Kutz US-5,749,690.

Though the cylindrical shear ring of the assembly as taught by Garman in view of Cabahug possesses an inwardly depending lip, he does not provide information relating to the association of this to be used with an snap ring groove in the said outer gripping surface of said shank member.

However, Kutz provides an invention surrounding a screw nut fastener assembly that incorporates a snap-ring groove embodiment. The snap ring is constructed as to fit onto the snap-ring groove that is found on the front end of the shank, 14 in figure 3 of Kutz.

Thus, at the time of the invention, it would have been obvious to one skilled in the art to have modified the fastener assembly as taught by Garman, in view of Cabahug to incorporate an additional embodiment of an assembly to incorporate a snap ring groove on the shank as taught by Kutz, to match up with the inwardly depending lip on the cylindrical shear ring to offer an additional means and strength of connection between the shank member and the cylindrical shear ring. Wherein linear traversal of said compression ring member with respect to said axially aligned collet member compresses said collet member to engage said at least one snap ring groove.

[6] Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garman US-5,110,244 in view of Cabahug US-5,613,816, in further view of Summerlin et al US-4,653,969, and even further view of Williams US-4,822,223 and Cassatt et al., US-5,816,761.

Garman teaches of a fastener assembly utilized to provide an arrangement for securing two members together whose assembly includes a compression ring, cylindrical shear ring, and having a hollow (internal bore-Claim 13) cylindrical pin or shank.

However, Garman fails to disclose expressly a fastener assembly that possesses the ability to be loaded prior to the linear traversal of the compression ring member onto the collet member (Claim 10); and that has two generally flat surfaces gripping the shank to aid this process (Claim 11); and has at least one groove extending around the circumference of said first end of said shank member constructed and arranged for gripping and placing a tensile load (Claim 12); or that the internal bore would be present within the pin or shank while the tension loading process was undergoing (Claim 13); or said internal bore has internal threads (Claim 14), including at least one axially aligned groove extending around the circumference of said internal bore (Claim 15).

Summerlin et al. teaches of the use of a tool that possesses two generally flat surfaces (58 in Fig. 1 of Summerlin et al.) that can be offered up to the protruding pin shank at its end, entering by the means of jaws (56 in Fig. 1 of Summerline et al.). According to line 29 from part 5 of Summerline et al., he states that, "Actuation of the pulling tool will cause the jaws 56 to engage the grooves of a pin inserted between them, and to retract the pin rearwardly with respect to the anvil so as to exert a pulling or tension force on the pin." This in itself provides tension to the pin or shank allowing the compression ring and the collet member to set into their respective engagement positions subsequently following. Continuing, Williams teaches of an internal bore having internal threads (28 in Fig. 2 of Williams), as well as an axially aligned groove extending around the circumference of said internal bore of such a insert that possesses an internal bore (14 in Fig. 1 of Williams).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the fastener assembly as taught by Garman, to elongate the cylindrical pin or

shank keeping the same width dimensions inclusive of the internal bore to allow the utilization of the grooves extending around the circumference. This would thus be able to incorporate a tool capable of holding, loading, and gripping this area of the assembly as taught by Summerlin. Thus, allowing an efficient tension force on the pin or shank providing a more stable environment before the linear traversal of the compression ring member onto the cylindrical shear ring. Also, incorporating the internal thread system and the axially aligned groove as taught by Williams into the design of the already permanent cylindrical pin would provide the fastening assembly with yet another means of tensioning capability through in the internal bore and

As for Claim 16, Re: Claim 10 and in additional view of Cassatt et al., a fastener system wherein shank member tensioning means includes a frangible stem, whereby said frangible stem is severed from said first end of said shank member when said first member reaches a predetermined tension prior to linear traversal of said compression ring member into said engagement position with respect to said collet member. Cassatt et al., discloses a blind fastener that utilizes a core bolt 30 that is driven by a drive stem or frangible stem 36. From line 12 part 5 of Cassatt et al., he states that, "Additional torque applied to the core bolt will cause the drive stem 36 to shear at the break neck groove 42." Thus, from the teaching of Cassatt et al. at the time of invention, it would have been obvious to one of ordinary skill in the art to modify the fastener assembly as taught by Garman to include an additional tensioning means as taught by Cassatt by means of a frangible stem. One that is severed from a first end of said shank member after an period of tensioning to the assembly.

[7] Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garman US-5,110,244 in view of Cabahug US-5,613,816, and in further view of Bradley, Jr.

Garman teaches of a fastener assembly utilized to provide an arrangement for securing two members together whose assembly includes a compression ring, cylindrical shear ring, and a cylindrical pin or shank.

However, Garman fails to disclose expressly a fastener assembly that possesses wrench flats.

Bradley, Jr. teaches of the use of wrench flats, and their pertinence with regard to possessing the ability for longitudinal adjustment of a set of members.

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the fastener assembly as taught by Garman, to incorporate a set of wrench flats, in order to give convenient and efficient method of directly increasing or decreasing tension of the engagements of the fastener assembly.

[8] As for Claims 19-24, Re: Claim 1, and in further view of Smith wherein said collet member is constructed of plastic, copper, brass, bronze, and steel (from part 3, line 28 of Smith, stating with regard to a collet, "fabricated of durable plastic, although they could be largely of metal, such as aluminum, steel, etc.").

[9] As for Claim 25, Re: Claim 1 and in further view of Gibson et al. wherein said collet member is constructed of rubber (from part 4, line 35 of Gibson et al., stating with regard to a collet, "for example split-steel collets and Rubber-Flex collets...").

Response to Arguments

[10] Applicant's arguments filed 4/8/2005 regarding rejections under 35 U.S.C. 103 have been fully considered but they are not persuasive. To begin, applicant states that certain features from Claim 1 are missing from *Garman* and *Cabahug*, including the following "a collet member having…an outer ribbed surface…and a compression ring member having…an inner ribbed surface" as well as the compression ring member being "linearly traversable with respect to said outer ribbed surface is a collet member between and first release position and a second engaged position", and that "said engaged position results in said ribbed surfaces compressing said collet member and tensilely loading said compression ring member to engage shank member having an outer gripping surface…"

Applicant continues to provide examples of how and why the above features are missing, applied individually or in combination to both *Garman* and *Cabahug*. First, applicant argues because each of the compression rings is broken into two halves, the compression ring by itself cannot put a shear ring in compression. Examiner would like to point out that in both columns 3 and 4 of *Garman*, beginning with lines 49 and 9 respectively, it is stated that, "the compression ring 44 could be a one piece design instead of two half shells." Further, regardless of whether the compression ring maintains a one or two-piece design, the fact remains that the compression ring does indeed apply compression to the shear ring. The definition of "compress" as defined by dictionary.com is: "to press together." As shown by Garman in going from Figs. 3 to 4, it is shown that the compression member 44 from Fig. 3 is moved downward to compress (press) against the shear ring 42 best shown in Fig. 4. Thus, in the instant case, there is compression between the two members at 68, then 62.

Continuing with the applicant's argument, it is stated that the counterbore from *Garman* puts both the shear ring and compression ring in compression. Therefore, the compression ring is not tensilely loaded, as claim 1 requires. According to dictionary.com once again, the definition of tensile is "of or relating to tension; capable of being stretched or extended." Though the definition of tensilely loaded may be interpreted differently then applicant, it must be known that the claims are what define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064. Furthermore, such a case does not alter the conclusion that its use in a prior art device would be prima facie obvious from the purpose disclosed in the reference." *In re Lintner*, 173 USPQ 560.

In addition, *Garman* speaks in columns 1 and 2, beginning with line 60 is that, "a method is provided for applying a preload force to a fastener assembly..." The compression ring in the case of *Garman* is caught between the forces of the external force being applied to the compression ring and that in opposition to the force holding the hollow cylindrical pin in abutment with one member. By the very nature of the external force applying said force onto the compression member, the collet member is thus compressed, immediately compressing that of the shank of the cylindrical pin; the extent of which stems from the compression ring having the capacity to provide loading to each component during the engaged position.

Lastly, the applicant argues that, assuming one accepts the internal thread of the insert were a ribbed surface from *Cabahug*, that the ribbed surface does not compress the movable mounted threaded element 82. First, the example of *Cabahug* was to provide or show of the use of threaded members being movable to one another by means of their threaded structure, and that such elements are considered art recognized equivalents, it being obvious, therefore, for one of

ordinary skill in the exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

Secondly, the ribbed surface of 87 in *Cabahug* does indeed compress, indirectly, that of the mounted threaded element 82 via 70 in Fig. 2 of *Cabahug*, though it is better illustrated if the ribbed surface of 87 (compression ring) compresses that of 84 (64) (collet member) by means of the threads of 90 as shown in Fig. 9 and discussed in col. 3, line 55. Furthermore, as stated above briefly, it is an art recognized equivalent to provide a connection for possible force or movement transfer between two members by the use of threads on said members. Substituting the internal thread of 87 of *Cabahug* for the inside of 44 in *Garman* will merely provide additional means for the compression member to move down onto of the shear ring member or apply a force with a threaded movement between, instead of just sliding down (as currently shown by *Garman*), as the results of such a movement will provide the same result; that is, of engaging a shank member via the use of both a compression ring and a collet member.

Conclusion

[11] **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

[12] Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272- 7082. The examiner can normally be reached on 7:30 am - 6:00 pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached on (571) 272-7075. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sincerely,
David Reese
Assistant Examiner
Art Unit 3677

ROBERT J. SANDY
PRIMARY EXAMINER